

Today's webinar is:

Chronic Pain: The Biopsychosocial Approach

Feb. 28, 2013, 1-2:30 p.m. (EST)







Chronic Pain: The Biopsychosocial Approach

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- Director, Deployment Health Clinical Center
- Associate Professor and Associate Chair (Research), Department of Psychiatry, Hébert School of Medicine, Uniformed Services University of the Health Sciences

Presenters:

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 Department of Anesthesiology & Critical Care Medicine, Johns Hopkins School of Medicine
- Professor, Department of Anesthesiology, Uniformed Services University of the Health Sciences
- Director of Chronic Pain Research, Walter Reed National Military Medical Center
- Chief, Anesthesia and Operative Service, 48th Combat Support Hospital
- Reserve Liaison, Pain Management Consultant to the Surgeon General of the United States Army

Robert D. Kerns, Ph.D.

- Professor, Departments of Psychiatry and Neurology, Yale University School of Medicine
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- National Program Director for Pain Management, VA Central Office
- Director, Pain Research, Informatics, Medical Comorbidities and Education Center, VA Connecticut Healthcare System

Continuing Education (CE) Details

- DCoE's awarding of CE credit is limited in scope to health care providers who actively provide psychological health and traumatic brain injury care to active-duty service members, reservists, National Guardsmen, military veterans and/or their families.
- At the end of the DCoE webinar, participants will be provided with the URL and date that the website to obtain CE credit will open and close. All who registered prior to the deadline on Tuesday, Feb. 26, 2013, at 11:59 p.m. (EST), are eligible to receive a certificate of attendance.
- The authority for training of contractors is at the discretion of the chief contracting official. Currently, only those contractors with scope of work or with commensurate contract language are permitted in this training.

Webinar Details

- The following CE credit is approved for this activity:
 - 1.5 AMA PRA Category 1 Credits™
 - 1.75 CE Contact Hours Physical Therapy and Occupational Therapy
 - 1.5 Nursing Contact Hours
 - 1.5 Social Work CE Hours
 - 1.5 APA Credits for Psychologists
- For complete accreditation statements, please visit the DCoE website to review CE credit
- Webinar pre-registration is required to receive CE credit
 - Some network securities limit access to Adobe Connect

Additional Webinar Details (continued)

- Webinar audio is **not** provided through Adobe Connect or Defense Connect Online
 - Dial: 888-455-0936
 - Use participant pass code: 3938468#
- Webinar information
 - Visit <u>dcoe.health.mil/webinars</u>
- Question-and-answer session
 - Submit questions via the Adobe Connect or Defense Connect Online question box

Webinar Overview – Chronic Pain: The Biopsychosocial Approach

The prevalence of chronic pain is a major psychological and physical health care issue in the world today. Historically, the focus of assessing and treating chronic pain has been on a biological level, but the focus has shifted to a biopsychosocial approach, which encompasses the psychological, biological and social factors of life.

There are two salient issues regarding pain care in injured service members: how to return as many injured service members as possible to duty, and how to reintegrate injured service members back into society in a condition as close as possible to their predeployment state.

This webinar will:

- Provide an overview of the prevalence and types of chronic pain
- Examine the biopsychosocial approach to chronic pain
- Review the assessment, treatment and management of chronic pain
- Discuss the challenges of working with patients with chronic pain

Common Battlefield Injuries & Strategies to Prevent Chronic Pain

Steven P. Cohen, M.D.

Required Disclosure



Steven P. Cohen Financial Relationship Disclosure

- I have no relevant financial relationships and do not intend to discuss the off-label/investigative (unapproved) use of commercial products/devices
- Nothing else to disclose

Causes of Morbidity & Mortality

Conflict	Causes of Morbidity & Mortality	DNBI: WIA: KIA
WWI	 Respiratory/ Infections Gastrointestinal NBI 	30: 2: 1
WWII	 Respiratory/ Infections NBI 	265: 3: 1
Korean War	 Respiratory/ Infections NBI 	330: 4: 1
Vietnam War	 NBI Respiratory/ Infections Ill-defined 	75: 4: 1
Gulf War	1. NBI 2. Gastrointestinal	100: 4.25: 1
OIF/ OEF	ı. NBI	25: 7.5: 1

Pain Clinic Diagnoses I

PAIN MEDICINE
SECTION EDITOR
CHRISTOPH STEIN

Presentation, Diagnoses, Mechanisms of Injury, and Treatment of Soldiers Injured in Operation Iraqi Freedom: An Epidemiological Study Conducted at Two Military Pain Management Centers

LTC Steven P. Cohen, MD*‡, MAJ Scott, Griffith, MD+‡, LTC Thomas M. Larkin, MD+‡, MAJ Felipe Villena, DOS, and Ralph Larkin, PhD#

*Department of Anesthesiology and Critical Care Medicine, Johns Hopkins Medical Institutions, Baltimore; †Department of Anesthesiology, Uniformed Services University of the Health Sciences, Bethesda, Maryland; ‡Department of Anesthesiology, Walter Reed Army Medical Center, Washington, DC; §Pain Management Center, Landstuhl Regional Army Medical Center, Landstuhl, Germany; and #John Jay College of Criminal Justice of the City University of New York

Diagnoses in Soldiers from OIF Treated in 4th Level Pain Clinics (n=162)

- Lumbar HNP (24%)
- Postsurgical pain (14%)
- Lumbar facet joint pain (12%)
- Muscle pain (11%)
- Neuropathic pain (9%)
- Lumbar DDD (7%)
- Soft tissue pain (6%)
- Cervical HNP (4%)
- CRPS II (4%)
- Lumbar spinal stenosis (4%)
- Fracture (4%)

- SI joint pain (4%)
- Phantom limb pain (3%)
- Cervical DDD (3%)
- Cervical facet joint pain (3%)
- Psychogenic pain (3%)
- CRPS I (2%)
- Stump pain (2%)
- Hydro-/spermatocele (2%)
- Thoracic facet pain (2%)
- Others (12%)

Treatment in OIF Soldiers at 4th Level MTF

- NSAID (56%)
- Short-acting opioid (43%)
- Physical therapy (34%)
- Anticonvulsant (31%)
- Lumbar ESI (22%)
- Antidepressant (17%)
- Muscle relaxant (17%)
- Long-acting opioid (13%)
- Lumbar TFESI (13%)
- Lumbar facet block/RF (12%)
- Tramadol (9%)
- Benzodiazepine (8%)
- Massage therapy (8%)

- Miscellaneous n block (7%)
- Sympathetic block (6%)
- TENS (6%)
- TPI (6%)
- Chiropractic (5%)
- Pulsed radiofrequency (5%)
- Cervical ESI (4%)
- Oral steroids (4%)
- Surgical referral (4%)
- SI joint injection (3%)
- Cervical facet block/RF (3%)
- Topical medication/Thoracic facet block/RF (2%)

< 2% Return-to-Duty Rate at 4th Level MTFs

Pain Clinic Diagnoses II

PAIN AND REGIONAL ANESTHESIA

Anesthesiology 2007; 107:1-1

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Return-to-duty Rates among Coalition Forces Treated in a Forward-deployed Pain Treatment Center

A Prospective Observational Study

Ron L. White, M.D.,* Steven P. Cohen, M.D.,†

Presenting Complaints for Coalition Forces (n=113)

- Lumbar radiculopathy (56%)
 - HNP, FBSS, Stenosis
- Thoracic pain (12%)
 - Myofascial pain
 - Neuropathic pain
- Cervical radiculopathy (7%)
- Groin pain (7%)
 - Postherniorraphy
 - Neuralgia

- Non-radicular leg pain (7%)
 - Plantar fasciitis
 - Piriformis syndrome
 - G. trochanteric bursitis
- Axial low back pain (6%)
 - Facet arthropathy
 - SI joint pain
- Non-radicular arm pain
- Neck pain/ headache

Treatment of Soldiers at Ibn Sina (Iraq)

Interventional

- Transforaminal ESI (n=101)
- TPI (n=21)
- Cervical ESI (n=19)
- Lumbar facet block (n=16)
- Groin block (n=9)
- Plantar fascia injection (n=9)
- Piriformis injection (n=7)
- Lumbar ESI (n=5)
- Sacroiliac joint injury (n=3)
- Continuous epidural (n=3)
- Spinal manipulation (n=3)

Non-Interventional

- NSAID (> 90%)
- Physical therapy
 - LBP, neck pain, leg pain
- Muscle relaxant
 - LBP, thoracic pain
- Gabapentin/TCA
 - Radiculopathy
- Short-acting opioid
 - Radiculopathy

Forward-Deployed Pain Treatment

RTD Rate @ Forward-Deployed Pain Clinic: 94.7%



RTD Rates for Combat Stress by Location

 MHC by combat stress team: > 95%

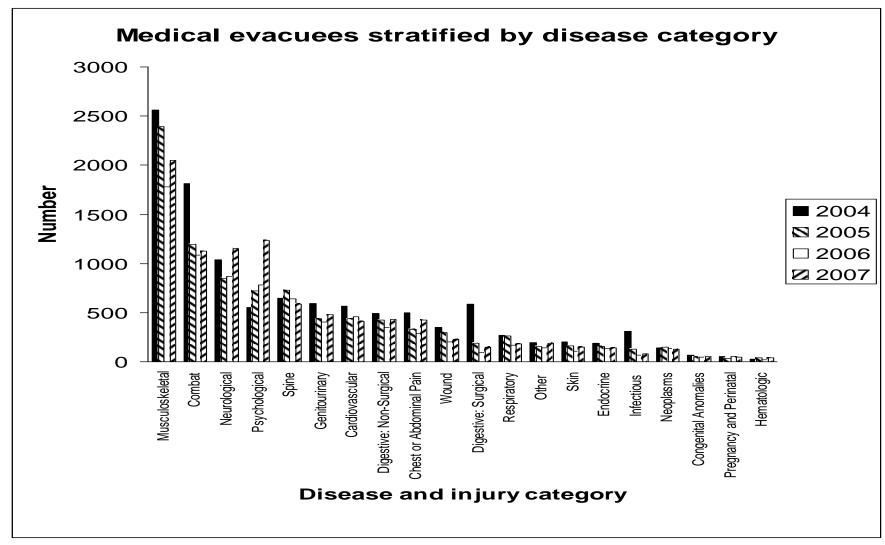
• CSH: 75%

Kuwait or Qatar: 50%

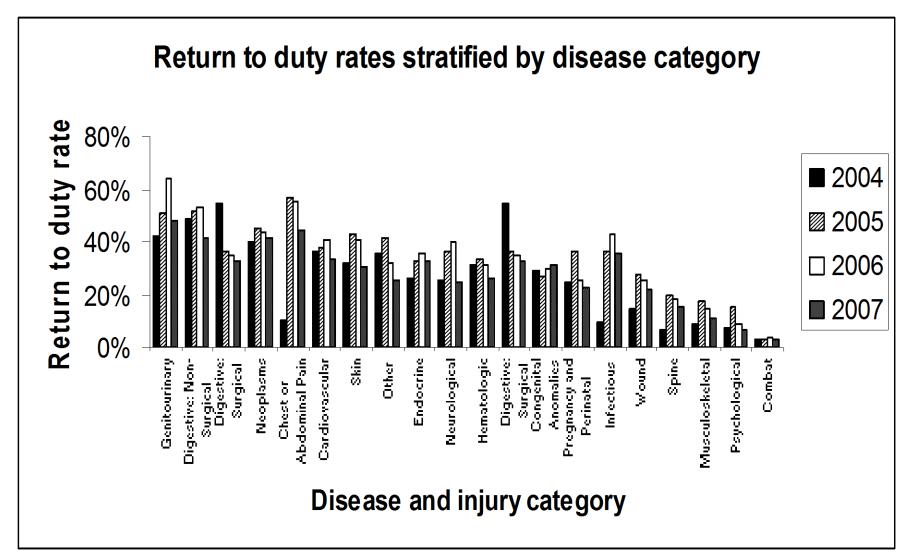
• Landstuhl, Germany: 10%

• 4th Level MTF in CONUS: < 1%

Service Members

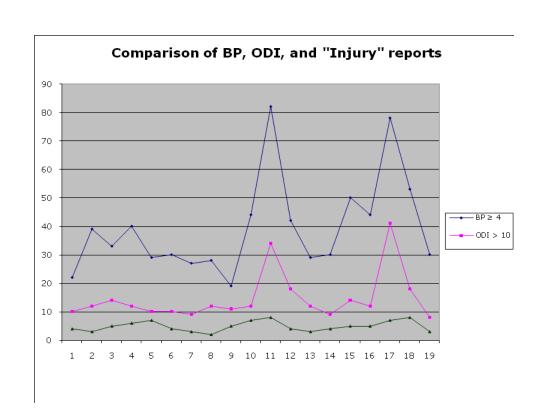


Service Members



Prospective Incidence of LBP in Soldiers

- 5-yr prospective study in 285 special operation reservists
- 54% reported no history of LB problems on 3 consecutive U.S. Army standardized surveys
- Over 18 months, 78%, 62% and 12% reported pain scores > 2, 4 or 6/10
- ≥ 25% reported ODI ≥ 10
- At study conclusion, 97% still described themselves as having no history of LB problems



Back Pain Risk Factors in Deployed Soldiers

- > 50% of OIF & OEF pain patients
- Increased activity levels
- Heavy gear
- Psychosocial stressors
- PTSD/ combat stress
- Reduced coping mechanisms
- Secondary gain/ poor job satisfaction



Back Pain During War

- > 1400 service members from 2004-7
- 13% RTD rate
- Factors associated with (+)
 outcome were female gender,
 OEF, officer, and previous BP
- Factors associated with (-)
 outcome were sailor/marine,
 psych dx, and not being treated
 in pain clinic



Effect of Duty on Incidence

- Conscription in military increases occurrence rate by > 200%
- Nevin & Means: Deployment increases rate of L, T & C-spine pain between 20% and 40%
 - Increased work hours almost double the increased rate
- Training and combat missions associated with 50% increase in spinal pain
- Secondary gain issues exist across all occupational specialties



Risk Factors for Back Pain Disability

- Previous LBP episode
- Low education
- High job stress
- Physically demanding job
- Poor job satisfaction
- Obesity
- Somatization
- Low levels of physical activity
- High baseline disease burden

- Poor coping skills
- High anxiety levels
- Depression
- "Negative" attitude
- Smoking
- Fear-avoidance
- Catastrophization
- Not having opportunity for reduced work load after RTD

Neck Pain During War

- 1% of evacuations
- 16.1% RTD rate
- Factors associated with RTD were female gender, nonarmy affiliation, & treatment by pain specialist
- Factors associated with (-)
 outcome were co-existing
 psych dx, prior neck pain, &
 headache

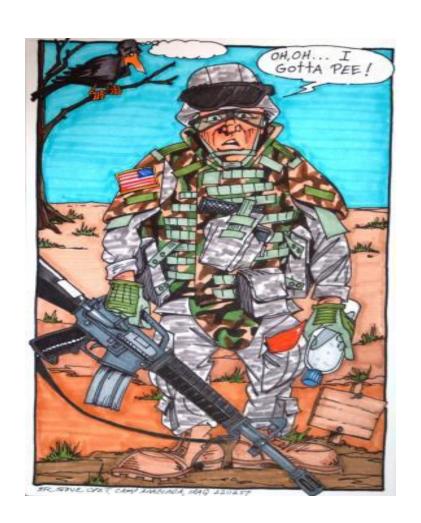






Preventing Chronic Spinal Pain

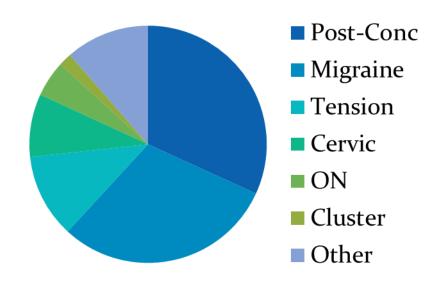
- Early & aggressive treatment
 - Longer duration associated with poorer outcomes
 - With neuropathic symptoms, early reaction may prevent chronic pain
 - "In theater" > in garrison
- Early resumption of activities
- Address occupational & psychosocial factors
- Multidisciplinary program
- Treatment to facilitate proper neck movement & biomechanics



Headaches

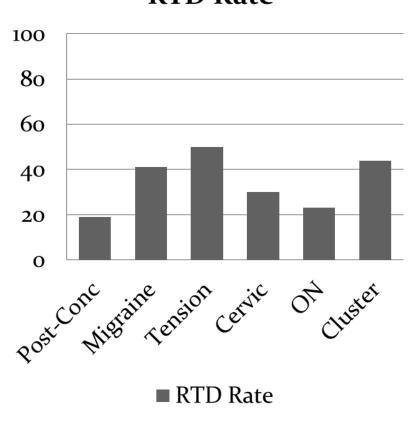
- Evacuation incidence 0.09%
- Factors associated with (-)
 outcome: male, TBI,
 smoking, psychopathology,
 prior pain history, aura,
 brain-imaging
 abnormalities, enlisted
 person, OEF deployment

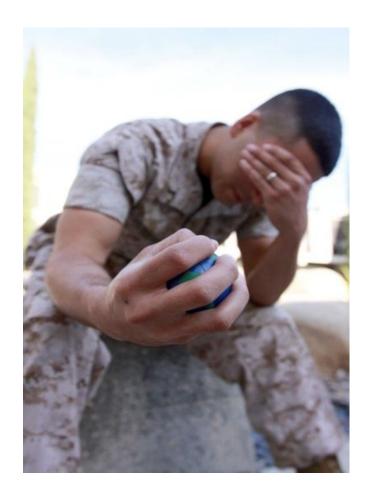
Headache Type



Return-to-Duty Rate by Diagnosis

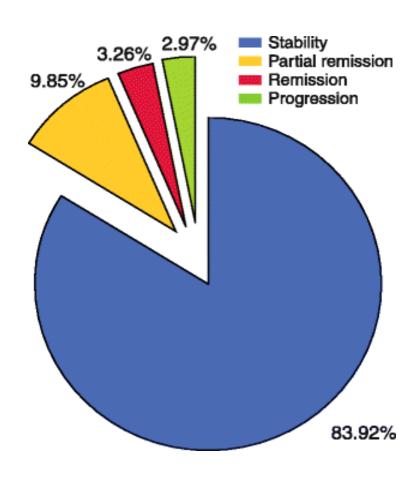
RTD Rate





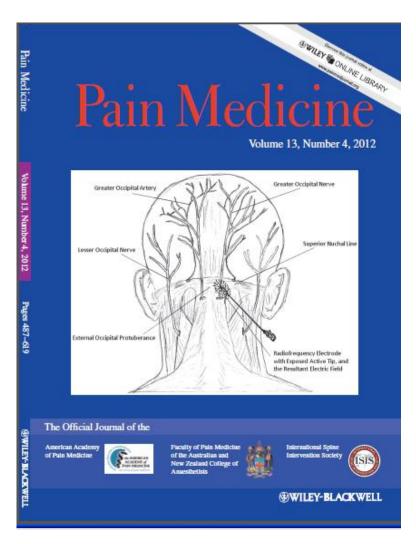
Preventing Chronic Headaches

- Prevent medication overuse (including caffeine), especially opioids
- Remove environmental exposures
- Weight loss (if obese) and treatment of snoring/ sleep apnea
- Treat psychiatric comorbidity & stress



1-Year Prognosis of Migraine

What is the Best Way to Treat Post-Traumatic Headaches?



- Pharmacotherapy
- Psychological interventions
- Injections
- Pulsed Radiofrequency
- Occipital nerve stimulation

Clinical Trial: Pulsed RF vs. Steroid Injections scohen40@jhmi.edu

Post-amputation Pain

- Most common cause of wartime amputations are IEDs
- Trauma most common cause of UE amputation
- Incidence of PAP not influenced by cause
- In trauma, possible correlation between PP and postoperative pain
- Phantom pain may be due to supraspinal, spinal and peripheral mechanisms



Presentation

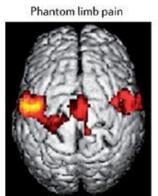
- Most cases of PP develop within 96 hours
- Strong correlation between stump and phantom pain
- No relationship between PP and psychological factors
- PP associated with other pain complaints

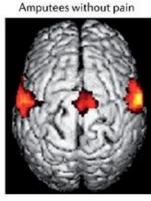


Photo Courtesy: Dr. Steven Cohen

Identifying Mechanisms

- Supraspinal, spinal and peripheral mechanisms
- Cortical reorganization
 - Correlation between size and intensity of PLP & amount of cortical reorganization
- Sympathetic mechanisms
- Spinal mechanisms
- Peripheral mechanisms
 - Neuroma, adhesive scar tissue, bursitis



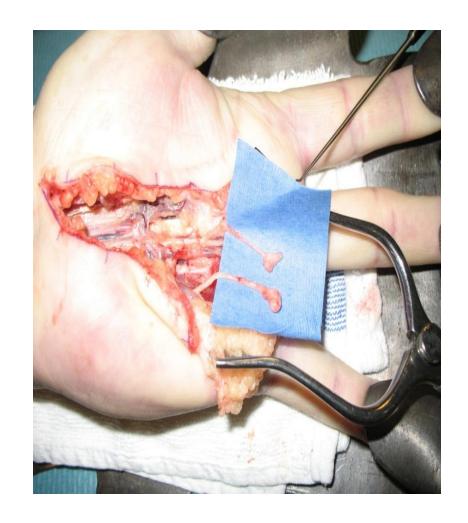






Treatment of Residual Limb Pain

- Should address underlying cause
- May include revision surgery, neuroma injection(s), sympathetic blocks, pharmacotherapy, different prosthetics, CAM



Treatment of Phantom Limb Pain

- Mixed results for epidurals
 & preemptive n. blocks to
 prevent PAP
- Treatment of PLP similar to other forms of neuropathic pain
 - Strongest evidence for opioids
- Incidence decreases with time



Troops reportedly popping more painkillers

By Gregg Zoroya, USA TODAY, 20 October 2008

Recreation & Reintegration





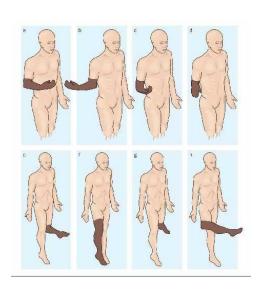


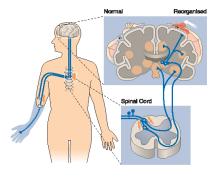
Prospective Studies Evaluating Epidural Effect on Preventing PLP

Author	# Pts	Random- ization	Blinding	Pre-op	Hrs. Pre- op	Intra-op	Post-op	Effect
Bach 1988	25	+	-	+	72	+	-	+
Jahangiri 1994	24	-	-	+	> 24	+	+	+
Schug 1995	23	-	-	+	24	+	+	+
Katsuly 1996	45	+	?	+		+	+	+
Nikolajsen 1997	60	+	+	+	18	+	+	-
Lambert 2001	30	+	-	+	24	+	+	No difference between epidural & PN groups
Wilson 2008	53	+	+	-	0	+	+	No difference between epidural groups
Karanikolas 2011	65	+	+	+	48	+	+	+ 37

Summary of Epidural Studies

- Results mixed but weakly favor preemptive analgesia
 - Good pre- and post-op pain control may decrease PLP
 - Benefits may be greater if epidurals started early
 - More likely to detect difference when "control" group not optimally managed
 - Insufficient data on perineural analgesia







Factors Associated with Chronic Post-Traumatic Pain

- Genetics
- Younger age
- Female gender
- Psychosocial issues (e.g. depression, PTSD/anxiety, low education and job satisfaction)
- Intensity & duration of pain

- Type & extent of trauma
- Anesthesia & analgesic techniques
- Co-existing pain disorders
- Opioid dosage/adjuvants

Preventive Analgesia

Analgesic Agents

- Gabapentinoids
- Ketamine/NMDA antagonists
- Antidepressants
- NSAIDs

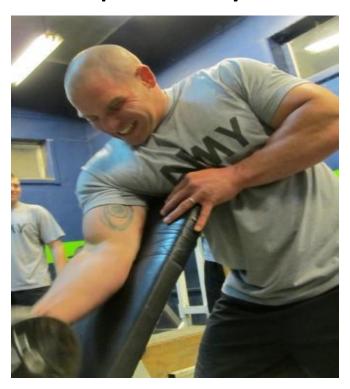
Evidence for Reducing Chronic Pain

- Conflicting, but in favor of gabapentinoids
- Conflicting, but mostly negative
- Limited, but in favor of
- Limited but negative

Can We Extrapolate Strategies to Treat Combat Stress to Pain?

- Brevity: brief treatment (≤ 3d)
- Immediacy: Focus on early identification & treatment
- Centrality: Rx separately from unit in 1 area; emphasize good prognosis; consistency of disposition
- Expectancy: Expect rapid recovery and RTD
- Proximity: RX close as possible to unit & allow unit to aid in support
- Simplicity: Rx directed to RTD; minimize medications

6 Aids to Rapid Recovery: **BICEPS**



Conclusions

- NBI are the major cause of unit attrition in modern warfare
- Risk factors for medical evacuation of NBI-related conditions are similar to civilian life
- As military medicine evolves, pain management capabilities will take on an increasingly vital role
 - Returning battle-wounded soldiers to their pre-morbid state;
 - Treating and preventing non-battle-related injuries
- Forward-deployed pain management may improve the return-to-duty rate and better preserve unit strength

Questions?



Psychological Treatment of Chronic Pain

Robert D. Kerns, Ph.D.

Director, Pain Research, Informatics, Medical Comorbidities, and Education (PRIME) Center, VA Connecticut Healthcare System

National Program Director for Pain Management, Veterans Health Administration

Professor of Psychiatry, Neurology and Psychology, Yale University



Required Disclosure

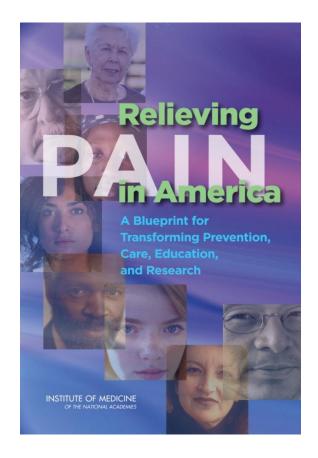
I have no relevant financial relationships and do not intend to discuss the off-label/investigative (unapproved) use of commercial products/devices.

I have received research support from:

- Department of Veterans Affairs
- Donaghue Foundation and Mayday Fund

Chronic Pain: A Significant Public Health Problem

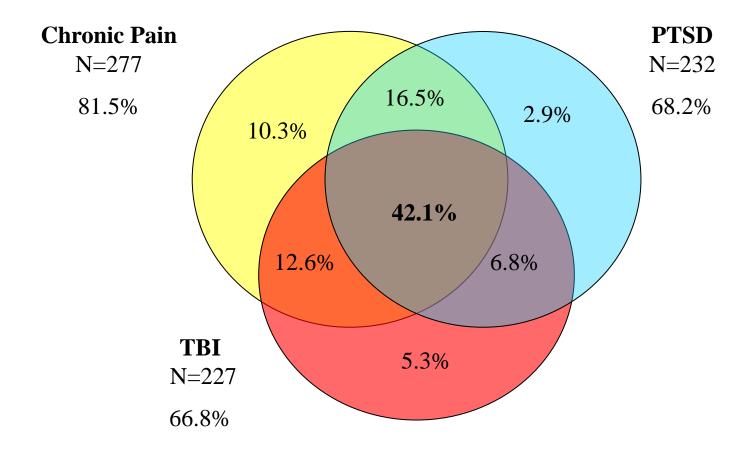
- Over 100 million
 Americans suffer from pain
- Estimated cost to society is between \$500 and \$635 billion annually



Pain and Psychiatric Disorder

- Recent estimates suggest that pain and depressive disorder co-occur 30-60% of the time
- Anxiety disorders may be present 35% of the time among persons with chronic pain
- Pain and PTSD co-occur; 20-34% of persons with chronic pain meet criteria for PTSD; chronic pain is present in 45-87% of persons with PTSD
- Pain is present in 37-61% of patients seeking substance use disorders treatment
- Pain undermines effective treatment for depression, anxiety disorders, PTSD and substance use disorders

Prevalence of Chronic Pain, PTSD and TBI in a sample of 340 OEF/OIF veterans



Personal Narrative

"It's horrible. I can't do the things I used to be able to do because of the pain. I am terribly depressed because I cannot take part in activities that bring meaning and joy to my life like going to museums and to shows. Now it takes everything I have to walk two blocks because of the pain."

42 year-old female with chronic back pain

Personal Narrative

"It's simply unbearable. You try to focus on other things/activities but the pain is always there. I have days when I think it is no longer worth living because of the pain. The medications only help a little and cause more problems than real relief. I am frustrated beyond words by having to live with pain on a daily basis."

86 year-old male with postherpetic neuralgia

Personal Narrative

"When I think about the day I was injured I can feel the pain in my back flare up right where I was hurt. My whole day seems to be spent waiting for the time to take my next pain pill. I know they don't help that much, but it's all I have."

36 year-old male veteran with chronic back and leg pain

What is Chronic Pain?

- Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Chronic pain = Pain with a duration of three months or greater that is often associated with functional, psychological and social problems that can negatively impact a person's life.

Burden of Chronic Pain

Functional Activities

- Physical functioning
- Ability to perform activities of daily living
- Sleep disturbances
- Work
- Recreation

Social Consequences

- Marital/family relations
- Intimacy/sexual activity
- Social isolation

Psychological Problems

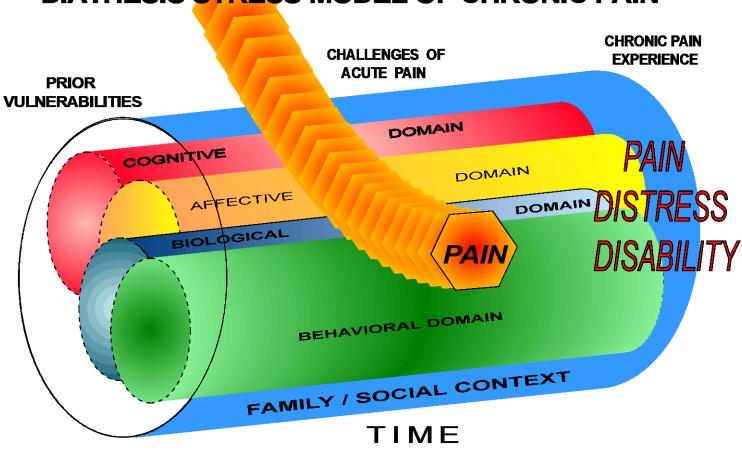
- Depression
- Anxiety
- Anger
- Loss of self-esteem

Financial Consequences

- Healthcare costs
- Disability
- Lost workdays

Biopsychosocial Perspective

DIATHESIS STRESS MODEL OF CHRONIC PAIN



Key Components of Diathesis-stress Model of Chronic Pain

- Multidimensional experience of chronic pain
- Multiple person factors may serve as prior vulnerabilities
- Challenges/stress of pain
- Vulnerabilities (strengths) interact with stress of pain to determine adjustment
- Social learning context
- Developmental and dynamic model

Psychological factors may....

 Modify the perception of pain, and...

Modulate the experience of pain, but...



They are rarely the cause of pain

Photo Courtesy: U.S. Army

The Gate Control Theory

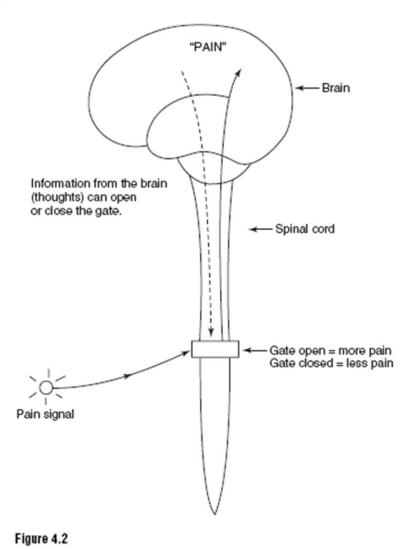


Figure 4.2 The Gate Control Theory

The Pain Cycle



• Weight loss/gain



Pain

Disability



- Negative self-talk
- Poor sleep
- Missing work



Distress

- Less active
- Decreased motivation
- Increased isolation

The Challenge of Pain

Over time, negative thoughts and beliefs about pain and behaviors related to pain can become very resistant to change.

Thoughts

- My pain is going to kill me
- This is never going to end
- I'm worthless to my family
- I'm disabled
- There is nothing I can do for myself
- I'm a bad father, husband and provider

Behaviors

- Staying in bed all day
- Sleeping all day
- Staying away from friends
- Decreasing activities that have the potential to increase pain
- Taking more medication than prescribed

Natural History of Persistent Pain: A Patient's Perspective

Awareness and Interpretation of Symptoms Help/treatment-seeking **DEMORALIZED Diagnostic uncertainty Patient Physician** Significant other frustration frustration frustration **Doctor shopping** Multiple costly, invasive diagnostic tests Suggestion of psychological causation or malingering Increased symptom reporting, pain behaviors and help-seeking Increased emotional distress



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Goals of Chronic Pain Treatment

- Identify and treat/manage underlying disease/pathology
- Reduce the incidence and severity of pain
- Optimize individual's functioning/productivity
- Reduce suffering and emotional distress
- Improve overall quality of life



Principles of Pain Treatment

- Multidimensional and interdisciplinary
- Treat comorbid conditions
 - Example of depression
- Treatment very rarely leads to "cure"
 - Education about chronic disease management model
- Establish patient-centered goals
 - Behaviorally-specific functional goals
 - Feasible, meaningful goals (e.g., two point reduction on 0-10 numeric pain rating scale may be clinically significant)

Patient-centered Pain Management

- Informed by chronic illness model
- Empowering patients (and care partners) through reassurance, encouragement and education
- Conservative use of analgesics and adjuvant medications
- Promotion of regular exercise and healthy and active lifestyle
- Development of adaptive strategies for managing pain



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Psychological Treatments

- Supportive therapies
- Self-regulatory treatments (SRT)
 - Biofeedback
 - Relaxation training (progressive muscle relaxation; autogenic training)
 - Hypnosis
- Behavioral interventions (BEH)
 - Altering pain-relevant communication
 - Behavioral activation via contingency management
- Cognitive-behavioral therapy (CBT)
 - Re-conceptualization of pain as problem to solve
 - Coping skills training

Efficacy of Psychological Interventions

Strong support for multidisciplinary approaches

 Flor et al. (1992). Efficacy of multidisciplinary pain treatment centers: A metaanalytic review. *Pain, 49,* 221-230.

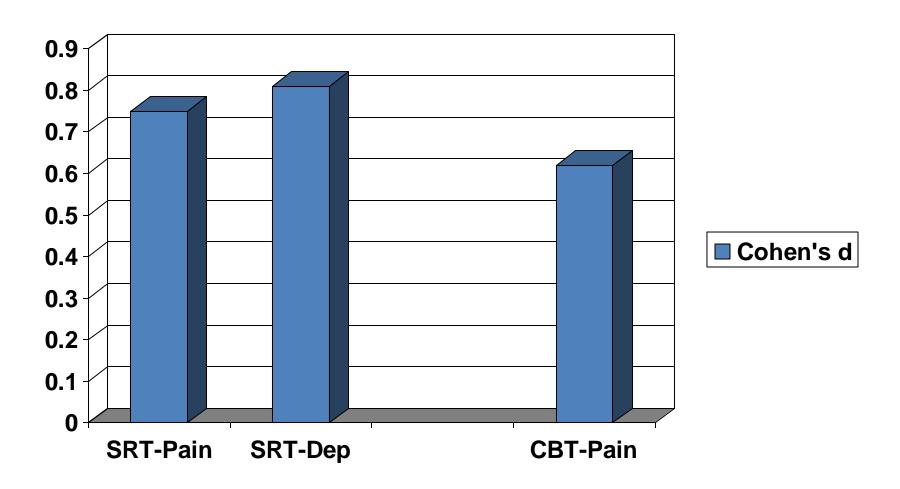
Recent reviews document efficacy

- Hoffman et al. (2007). Meta-analysis of psychological interventions for chronic low back pain. Health Psychology, 26, 1-9.
- Dixon et al. (2007). Psychological interventions for arthritis pain management in adults. Health Psychology, 26, 241-250.
- Kerns et al. (2011). Psychological interventions for chronic pain. Annual Review of Clinical Psychology, 7, 1-7.

Support for other chronic painful conditions

- Headache
- Musculoskeletal pain
- Burn pain

Meta-analysis of Psychological Interventions for Chronic LBP



Cognitive Behavior Therapy Three Interrelated Phases

- Reconceptualization of chronic pain as chronic disease; pain as manageable/controllable; emphasis on learning a pain self-management approach
- Skills acquisition; behavioral activation and learning adaptive cognitive and behavioral pain coping skills
- Maintenance and relapse prevention; problemsolving

Characteristics of CBT for Chronic Pain

- Problem-oriented
- Educational
- Collaborative
- Skill acquisition and practice, in clinic and at home
- Encourages expression, and then control, of maladaptive thoughts and feelings
- Addresses the relationships among thoughts, feelings, physiology, and behavior
- Emphasizes relapse prevention and maintenance

Other Key Ingredients

- Supportive, respectful, compassionate, understanding therapeutic relationship
- Explicit attention to motivation and readiness to adopt a selfmanagement approach
- Explicit attention to sound behavior change principles (e.g., appropriate goal setting and effective use of social reinforcement)

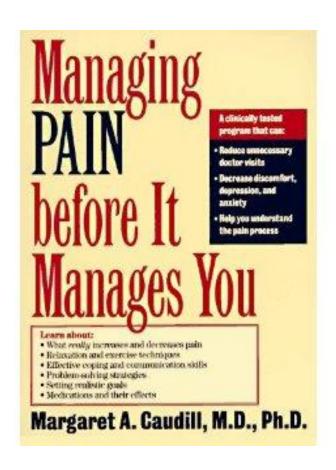


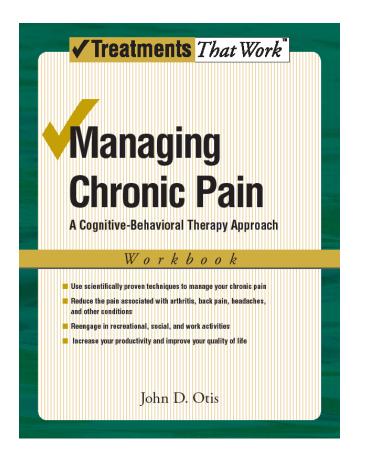
Common Components of CBT

- Adoption of a self-management approach
- Behavioral activation
- Pacing/rest-activity cycling/avoiding pain-contingent rest
- Cognitive coping skills training
- Relaxation/stress-reduction skills training
- Problem-solving skills training
- Cognitive restructuring

Cognitive Behavior Therapy for Chronic Pain

Chronic Pain Self-Management Books





Questions?



Thank You

- Throughout the webinar, you are welcome to submit questions via the Adobe Connect or Defense Connect Online question box located on the screen.
- The question box is monitored during the webinar, and questions will be forwarded to our presenters for response during the question-and-answer session of the webinar.
- Our presenters will respond to as many questions as time permits.

Question-and-Answer Session

- Submit questions via the Adobe Connect or Defense Connect Online question box located on the screen.
- The question box is monitored and questions will be forwarded to our presenter for response.
- We will respond to as many questions as time permits.

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- Please take the <u>Interactive Customer Evaluation</u> found on the Monthly Webinar section of the DCoE website
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If you pre-registered for this webinar and want to obtain a continuing education (CE) certificate, you must complete the online CE evaluation.

- If you meet the eligibility requirements and pre-registered on or before Tuesday, Feb. 26, 2013, at 11:59 p.m., please visit conf.swankhealth.com/dcoe to complete the online CE evaluation and download your CE certificate.
- The Swank HealthCare website will be open through Thursday,
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Save the Date

Next DCoE Monthly Webinar:

Vestibular Disturbances Post mTBI

March 28, 2013 1-2:30 p.m. (EST)

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